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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Hartmut Schumacher

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EXAMINER

RUTLAND WALLIS, MICHAEL

ART UNIT

PAPER NUMBER

2836

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/590,876	<b>Applicant(s)</b> SCHUMACHER ET AL.	
	<b>Examiner</b> MICHAEL RUTLAND WALLIS	<b>Art Unit</b> 2836	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 05 October 2010.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 7-11 and 13-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 7-11 and 13-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 August 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)         | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)         | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Drawings***

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the MOSFET must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Response to Arguments***

Applicant's arguments have been considered but are moot in view of the new ground(s) of rejection.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 7, 10 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Heckel et al. (U.S. Pub. No. 2006/0012941) in view of Rothleitner et al. (U.S. Pat. No. 6,731,023)

With respect to claim 7 Heckel teaches a device (Fig. 1) for supplying an ignition current from an energy reserve capacitor to at least one ignition power module, comprising: a voltage regulator (item 3) connected to the energy reserve capacitor (item Cs) and at least one current source (item 6 or 7), the voltage regulator being directly connected to the at least one ignition power module (item 4) such that the voltage regulator sets a voltage (power module 3 provides voltage and current to trigger for example airbags) at the at least one ignition power module at a predetermined level; and a control module (see microcontroller) which selectively triggers the voltage

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regulator to alternatively operate as a safety semiconductor. Heckel however does not teach a polarity reversal diode. Rothleitner teaches the use of a polarity reversal diode (item 16 and 58) connected in a charging connection to an energy reserve capacitor. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Heckel to include a diode connected to the capacitor in order to insure transient voltages or reversal do not damage connected circuitry.

With respect to claims 10 and 14 Heckel teaches a safety semiconductor including at least one power transistor (item T).

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Heckel et al. (U.S. Pub. No. 2006/0012941) in view of Rothleitner et al. (U.S. Pat. No. 6,731,023) in view of Smith et al. (U.S. Pat. No. 5,845,729) Heckel and Rothleitner teaches the voltage regulator is disconnectable (via removal of power or disabling the connection of the power from the supply) and allows an electric current to be supplied to the at least one ignition power module, however Heckel and Rothleitner do not teach the use of an external microcontroller. Smith teaches the use of a microcontroller (item 28) external to the drive and power modules. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Heckel and Rothleitner to supply power to the ignition module as a function of the microcontroller in order to allow for connection of sensors and other feedback to be monitored to determine when to control the power to the ignition module.

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Heckel et al. (U.S. Pub. No. 2006/0012941) in view of Rothleitner et al. (U.S. Pat. No. 6,731,023)

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in view of Smith et al. (U.S. Pat. No. 5,845,729) in view of Ravas, Jr. et al. (U.S. Pat. No. 5,459,449) Heckel and Rothleitner as modified above teaches the device of claim 8, however do not teach the further limitation of diagnosis as recited. Ravas 449 teaches a diagnosis (item 44) is provided for a safety semiconductor (item 20 or 34). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Heckel and Rothleitner to include the diagnosis of the device in order to allow for testing to insure proper operation of the device.

Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Heckel et al. (U.S. Pub. No. 2006/0012941) in view of Rothleitner et al. (U.S. Pat. No. 6,731,023) in view of Ravas, Jr. et al. (U.S. Pat. No. 5,459,449) Heckel and Rothleitner teaches the device of claim 7, however does not teach the further limitation of diagnosis as recited. Ravas 449 teaches at least one current source (item 30) assigned to the voltage regulator (item 22) for diagnosis (col. 2 line 65) of the at least one ignition power module. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Heckel and Rothleitner to diagnose the device in order to allow for testing to insure proper operation of the device.

Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Heckel et al. (U.S. Pub. No. 2006/0012941) in view of Grasshoff (U.S. Pat. No. 7,352,080) Heckel teaches the use of a MOSFET however does not teach the use of an energy reserve voltage is created by an additional diode and a capacitor to trigger a gate of the MOSFET device (items 2 and 3). Grasshoff teaches the use of an energy reserve voltage (for example output of item 20) is created by an additional diode (item 22) and a

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capacitor (item 24) to trigger a gate of the MOSFET device. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Heckel to include the use of an additional diode and capacitor as seen in Grasshoff in order to insure sufficiency triggering voltage is reliably available.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Rutland-Wallis whose telephone number is 571-

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272-5921. The examiner can normally be reached on Monday-Thursday 7:30AM-6:00PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jared Fureman can be reached on 571-272-2391. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Michael Rutland-Wallis/  
Primary Examiner, Art Unit 2836